and added new claims 57-59. Accordingly, claims 44-47 and 56-59 are under consideration at this time.

New claims

New claims 57-59 are fully supported by the specification. Claim 57 is dependent on claim 46 and is directed to the entire recombinantly produced homogeneous protein (as opposed to the soluble fragments). Claim 58 is directed to a soluble fragment of a recombinantly produced homogeneous protein which itself is capable of binding human tumor necrosis factor. Claim 59 is directed to a soluble fragment of the recombinantly produced homogeneous protein which comprises the amino acid identified in the specification as IA. Support for the amino acid sequence of IA can be found on page 7 of the specification and in originally filed claim 6. None of these claims raises an issue of new matter, nor do these claims expand the scope of applicants' claimed invention.

Allowable claims

Claims 45 and 56 were acknowledged to be allowable in the Office Action.

35 U.S.C. §112 rejection

Claim 45 was rejected under 35 U.S.C. §112, second paragraph, as allegedly indefinite for failing to particularly point out and distinctly claim the subject matter which

applicants regard as the invention. Specifically, the word "contains" was recommended to be replaced with the word "has" (as in claim 56) because the Patent Office alleges that the "insoluble protein as claimed will have the amino acid sequence of Figure 1 and not contain it."

Applicants again traverse this rejection but have amended claim 45 to recite the term "comprises" instead of "contains". Applicants maintain that this change in language does not alter the scope of the claim. Rather, this language was used to be consistent with language commonly employed by other patentees.[1] Claim 45 is dependent upon claim 44 and contains all of the limitations found therein. Thus, the protein must be homogeneous, insoluble, bind tumor necrosis factor, and have an apparent molecular weight of about 55 kilodaltons on a nonreducing SDS-polyacrylamide gel. Claim 45 further requires that the protein comprises the amino acid sequence of Figure 1. The Patent Office has determined that claim 44 meets the requirements of 35 U.S.C. §112. From a legal perspective, adding the limitation that the protein comprises the amino acid sequence of Figure 1 to a claim that fully meets the requirements of 35 U.S.C. §112

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[1] Open-ended language is common in dependent claims of this type. See for example US Patent No. 5,441,934 (claim 5 reads as follows: The peptide of claim 4 **comprising** the sequence defined in SEQ ID NO:4.) and US Patent No. 5,639,605 (claim 2 reads as follows: The nucleic acid of claim 1, wherein said alpha-chain **comprises** mature SEQ ID NO 2).

cannot render the claim indefinite. Accordingly, it is applicants' position that claim 45 is definite within the meaning of 35 U.S.C. §112.

Considering the above, applicants request that the rejection under 35 U.S.C. §112 be withdrawn.

35 U.S.C. §102 rejection

Claims 44, 47 and 47 were rejected under 35 U.S.C. §102(e) as allegedly unpatentable over Smith et al. (U.S. Patent No. 5,395,760).

Before addressing Smith et al., applicants point out that the Office Action contains an inaccuracy. The Office Action states in part:

> Applicant appears to argue that the reference is inapplicable in view of alleged prophetic examples. At issue is whether the patent places the invention in the grasp of the public. It is the Examiner's position that the teachings of the patent enable one skilled in the art to arrive at the invention as now claimed.

No argument was made during prosecution of the present patent application regarding prophetic examples. Applicants believe that the Patent Office has confused the present application (claiming proteins having an apparent molecular weight of about **55** kD) with applicants' divisional patent applications (claiming proteins having an

apparent molecular weight of about **75** kD). It is this confusion that applicants believe triggered the statement concerning prophetic examples and perhaps this entire rejection.

The invention of claim 44, 45, and 56 relates to a homogenous insoluble **55** kD protein which binds human tumor necrosis factor ("TNF"). The invention of claims 46, 47, and 57-59 relates to a homogenous insoluble **55** kD protein, or a soluble fragment thereof, which binds human TNF and is recombinantly produced in a host cell from a DNA sequence heterologous to said host cell, which DNA sequence encodes said protein or said fragment.

Applicants traverse the Patent Office's rejection based on Smith et al. A reference on which a §102 rejection is based must describe every element of the invention claimed [see In re Marshall, 198 USPQ 344 (CCPA 1978); Ex parte Levy, 17 USPQ2d 1462 (BPAI 1990)]. Smith does not disclose every element of applicants' claimed protein and therefore cannot form a basis for a §102 rejection. Smith fails to disclose a homogenous 55 kD protein or fragments thereof that bind human TNF.

Smith relates to the "mature full-length human TNF-R" which is "a glycoprotein having a molecular weight of about 80 kilodaltons" (see Smith at column 3, lines 47-49,

and column 7, lines 14-20). The only mention of a 55 kD TNF-R in Smith is found in the "Background of the Invention" section describing the prior art. For convenience, the entire portion mentioning 55 kD TNF-R is reprinted below:

> More recently, two separate groups reported the molecular cloning and expression of a human 55 kDa TNF-R (Loetscher et al., *Cell*, 61:351, 1990; Schall et al., *Cell*, 61:361, 1990). The TNF-R of both groups has an N-terminal amino acid sequence of the urinary binding protein disclosed in UK 2 218 101 A. Engelmann et al. (1989) and Engelmann et al. (1990).

Applicants point out that all of the documents cited in the above passage from Smith et al. have been considered by the Patent Office and no rejection was made in the present application.[2]

Figure 2A-2B of Smith et al. and Figure 4 of the subject application (a 75 kD protein) depict almost the same amino acid sequence between amino acid numbers 49-439 and 1-392, respectively. However, applicants are not here claiming a 75 kD protein. Applicants are claiming a protein having an apparent molecular weight of about 55 kD, such as that described in Figure 1 of the present specification. Smith et al. provides no meaningful disclosure with respect to the 55 kD TNF-R and therefore cannot anticipate applicants' claimed invention.

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[2] These documents were discussed at length during the prosecution of the parent patent application (now US Patent No. 5,610,279).

The Office Action states that "at issue is whether the patent places the invention in the grasp of the public." Smith et al. does not place applicants' claimed invention in the grasp of the public. Nowhere in Smith et al. is there any description of a homogenous insoluble 55 kD protein which binds TNF. Nowhere is there any description of a homogenous insoluble 55 kD protein, or a soluble fragment thereof, which binds human TNF and is recombinantly produced in a host cell from a DNA sequence heterologous to said host cell, which DNA sequence encodes said protein or said fragment. Nowhere does the Patent Office support its position that the teachings of Smith et al. enable one skilled in the art to arrive at the invention as now claimed.

In view of the above, applicants request that the rejection of claims 44, 46 and 47 based on Smith under 35 U.S.C. §102(e) be withdrawn.

Information Disclosure Statement

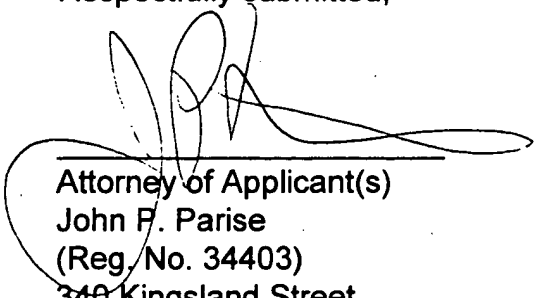
In connection with their Amendment dated February 25, 1997, applicants filed a Supplemental Information Disclosure Statement. Applicants have not received a copy of the initialed form PTO-1449 indicating that the cited document have been considered. Kindly forward a copy of the initialed form PTO-1449 to applicants.

Based upon the above, applicants request reconsideration, withdrawal of all rejections, and issuance of a Notice of Allowance.

If a telephone conference would be of assistance in furthering prosecution of this application, applicants' undersigned attorney request that he be contacted at the number provided.

No fee, except the fee for a two-month extension of time and the fee under 35 C.F.R. §1.17(r), is required in connection with the filing of this Amendment. If any fee is deemed necessary, authorization is given to charge the amount of any such fee to Deposit Account No. 08-2525.

Respectfully submitted,



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